

Rhinoceros in which this is the case; as in *Rh. indicus*, as well as the double-horned species with which I am acquainted, the female carries a horn or horns, though they are generally smaller than in the male.

#### EXPLANATION OF PLATE V.

- Fig. 1. Side view of the skull with the terminal ossification (\*) *in situ*.  
 „ 2. Section of the skull showing the posterior ossification (\*\*)  
 „ 3. Inner or under view of the conjoined nasal bones showing (a) the anterior termination of the upper fringe with the ossified nasal cartilages (b. c.) and (d) the roughened articular surface for the terminal bone.  
 „ 4. Front view of the tip of the nasals with the terminal bone *in situ*.  
 „ 5. Front view of the bone disconnected.  
 „ 6. Upper or articular surface of ditto.

#### V.—*On the Scientific Names of the Sind “Ibex,” the Markhor, and the Indian Antelope.*—By W. T. BLANFORD, F. R. S., F. G. S.

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In the Proceedings of the Asiatic Society for December last, p. 240, Mr. Hume proposed the names of *Capra Blythi* for the Sind wild goat or ibex, and *Capra Jerdoni* for the Suliman variety of the Markhor. The former animal is only incidentally mentioned in Jerdon's Mammals of India, p. 293, and then it is called *Capra Caucasica*.\* The two forms of Markhor inhabiting Kashmir and Afghanistan are mentioned by Jerdon, but very briefly. As the idea is prevalent in India that neither the Sind goat nor the Suliman Markhor are known to naturalists, I think it may be useful to shew that this view is erroneous, and that neither animal requires a new scientific name.

To take the Sind “ibex” first. This animal is, I think, clearly identical with the wild goat of Persia, Armenia and the Caucasus, and probably of Crete. There is another wild caprine animal in the Caucasus, more nearly allied to the Alpine and Central Asian species of ibex, and this animal is the true *Capra Caucasica*. The wild goat of Persia and Sind has long been known throughout the civilized world as the source of the genuine bezoar,† so greatly famed in former times for its supposed virtue as an antidote to poison.

\* It should be borne in mind that the Sind goat does not occur east of the river Indus, which was adopted by Dr. Jerdon, in the Prospectus published at the commencement of his “Birds of India,” as the western boundary of the Indian fauna.

† This word is Persian, or rather, a corruption of the Persian *pāzahr*, which again is derived from *fā-zahr*, useful or profitable (against) poison.

By many old writers, however, it was supposed that the bezoar was procured from a kind of antelope, and Linnæus confounded the wild goat of Persia, the *Pá-sang* (rock-footed), with the Persian gazelle, the horns of which apparently were described by him as those of his *Capra bezoartica*. The first author who gave a clear account of the bezoar goat was S. G. Gmelin, frequently called the younger Gmelin, who obtained a specimen in the Elburz mountains of Northern Persia close to the southern coast of the Caspian Sea. He, however, erroneously stated that the females have no horns. A head and horns procured by Gmelin were sent to St. Petersburg and carefully described and figured under the name of *Ægagrus* by Pallas in his *Spicilegia Zoologica*, Fasc. xi, pp. 43-49, tab. v, fig. 2, 3, published in 1776. In this paper, which contains a description of *Capra Sibirica* (or as Pallas terms it *Ibex alpium Sibiricarum*), Pallas points out that the *Ægagrus* is the apparent progenitor, in part at least, of the domestic goat, a view which has been generally admitted. Indeed Gmelin in the 13th edition of the *Systema Naturæ* united the tame goat, *Capra hircus*, L., with the *Ægagrus* of Pallas, under the name of *Capra ægagrus*.

Schreber and other writers did little more than adopt the name *Capra ægagrus* and copy Pallas's description and figures, which were repeated with an additional representation of the skull and horn-cores in Pallas's *Zoographia Rosso-Asiatica*. The only difference shewn by these figures from the ordinary horns of the Sind ibex is that, in the head figured by Pallas, the horns are slightly curved towards each other near the tips, which is not the case in most Sind specimens. But any one who has studied ruminants knows that trifling variations of this kind occur, and that the difference is of no importance is shewn by Hutton's remarking\* that, out of five pairs of horns in his possession, three were curved towards each other near the tips, and two were not. He also says† that some horns (of *C. ægagrus*) are turned inwards, others outwards, at the extremities. I think there can be no reasonable doubt but that the Sind ibex is identical with *C. ægagrus*.

It is quite unnecessary to enter further into the accounts of the animal in various European works beyond pointing out the confusion which has arisen about its name, and which has doubtless been the cause of its now receiving an additional synonym.

In the first Mammalian Catalogue published by the British Museum, the 'List of the specimens of Mammalia' issued in 1842, the name *Capra ægagrus* does not appear, but certain specimens, which are referred to *Capra Caucasica*, are said to be those described by Col.<sup>o</sup> Hamilton Smith, who was one of the editors of Griffith's translation of Cuvier's 'Animal Kingdom'. The references in the British Museum list under *C. Caucasica* are; first:

\* Calcutta Jour. Nat. Hist. II., p. 541.

† Ibid. p. 528.

Güldenstädt, Act. Petrop. 1779, t. 16-17; second: H. Smith, Griffith, A. K. V. 871. The first is the original description of *Capra Caucasica*, an animal differing widely from *C. ægagrus*, and having massive horns not angulate in front. To the second I shall refer immediately.

In the next British Museum Catalogue, that of the *Ungulata Furcipedæ* published in 1852, p. 153, the *Capra Caucasica* of the former catalogue is placed as a synonym under *Hircus ægagrus*, under which name both the *ægagrus* of Pallas and the tame goat, *Capra hircus* of Linnæus, are included, as they were by Gmelin, and again reference is made to Col. Hamilton Smith's description in Griffith's Animal Kingdom. It thus appears that Dr. Gray, the author of both British Museum catalogues, attributes the mistake about the name to Col. Hamilton Smith. But on turning to Griffith's Animal Kingdom, V, p. 357, I find No. 870, *Capra Caucasica* described as having "the horns triangular, the anterior edge obtuse, irregularly marked with transverse knots and uniform wrinkles," while *C. ægagrus* is quite correctly said to have the "horns forming an acute angle to the front, rounded at the back, transversely ribbed, forming an undulating anterior edge." It appears to me that the species were correctly discriminated by the older writer, and that the mistake of confounding them is Dr. Gray's.

Dr. Adams obtained the name *C. Caucasica* from the British Museum, and thus misled Jerdon, who, it may be seen, mentions in his Mammals, p. 292, that *Capra ægagrus* is found in Persia and other parts of Central and Western Asia; whilst on Adams's authority, though evidently with some doubt, he refers the wild goat of Sind and Baluchistan to *C. Caucasica*.

The synonymy given below will shew the confusion which has existed at the British Museum as to the name of this species. It figures by turns as *Capra Caucasica*, *C. hircus*, *Hircus ægagrus*, and if I am not mistaken *Hircus gazella*. Part of this confusion is I think due to the circumstance that Dr. Gray apparently looked upon the horns of *C. ægagrus* as those of a tame or feral race, and consequently united them with various tame goats. I have shewn that the wild *C. ægagrus* was united to the tame *C. hircus* by Gmelin, and the same author apparently mixed up half a dozen animals, one of which was the bezoar goat of Persia, in his *Antilope gazella*.\*

Indian naturalists of a former generation were better acquainted with the wild goat of Western Asia than Dr. Gray appears to have been. The first mention that I can find of the existence of *Capra ægagrus* in the neighbourhood of India is in a paper by Captain Hutton published in the Calcutta Journal of Natural History for 1842, where the animal is correctly named, and an excellent description given of its colour at different seasons, its appearance and habits. The accompanying figure is not good. Captain

\* *Capra gazella* of Linnæus is, I believe, the Cape Oryx.

Hutton also relates the success of some experiments made by him as to the effect of crossing the wild *Capra ægagrus* with tame goats, but he is disinclined to believe that the former is really identical in species with the latter. In Hutton's 'Rough notes on the Mammals of Candahar' in the Journal of the Society for 1846, he only refers to his previous description, and mentions the final result of his experiments in breeding between *C. ægagrus* and tame goats. The same animal apparently was obtained by Sir A. Burnes in Cabool, and was described by Dr. Lord in Appendix V to Burnes's work on that country, p. 386. He speaks of it as the Markhor-Pazuhu; the (latter word being perhaps a corruption of Pásang,) and notices that it is probably *Capra ægagrus*. A pair of horns obtained by Sir A. Burnes and named *C. ægagrus* by Blyth is in the Asiatic Society's collection, now the Indian Museum.

The following synonymy will enable any one to examine the history of the animal more fully: other references might be given, but the greater portion of them will be found quoted by the authors named. A most elaborate account of the habits of this animal in the Caucasus is given by Kotschy (l. c.).

*CAPRA ÆGAGRUS.—The Pásang or Persian wild goat.*

S. G. Gmelin, Reise. III., p. 493.

*Ægagrus*, Pallas, Spic. Zool. Fasc. XI, p. 43, Tab. V. fig. 2, 3, (1776).

*Caucasan*, Pennant, hist. quad. No. 14, p. 51.

*Antilope gazella*, Gmel., Syst. Nat. I, p. 190, *partim*, nec *Capra gazella*, L.

*Capra ægagrus*, Gmel., Syst. Nat. I, p. 193, *partim*.

*Ægoceros ægagrus*, Pall. Zool. Ros. As. I, p. 226, Tab. XVI, fig. 3, 4, 5.

*Capra ægagrus*, Schreb. Säugth. V, p. 1266, Pl. CCLXXXII.

*Ægoceros ægagrus*, Wagner, in Schreb. Säugth. V, 1, p. 1315.—Ib. Suppl. Pt. IV, p. 502.

*Markhor-Pazuhu*, Burnes, Cabool, p. 386, (1842).

*Capra ægagrus*, Hutton, Calcutta Jour. Nat. Hist. 1842, II, p. 521, Pl. XIX, (a poor figure of the whole animal).—J. A. S. B., XV, p. 161.

*Capra Caucasica*, Gray, List. Mam. Brit. Mus. (1843) p. 167.—Adams P. Z. S. 1858, p. 525; Wanderings of a naturalist, p. 36.

*Hircus ægagrus*, Gray, Cat. Ungulata Furcipedæ Brit. Mus. (1852), p. 153, *partim*.—Cat. Rum. Mam. (1872), p. 53, *partim*.

*Capra hircus*, Gray, Cat. Ungulata Furc. Pl. XX, fig. 1, 2, (horns).

*Capra ægagrus*, Kotschy, Verh. Zool. Bot. Ver. Wien, IV, 1854, p. 201.—Blasius, Säugth. Deutschl. p. 485, fig. 264, (skull and horns).

? *Hircus gazella*, Gray, Cat. Rum. Mam. p. 53, *partim*.

*Capra ægagrus*, Blyth, Cat. Mam. Mus. As. Soc., p. 176. No. 544, (1863).

*Capra Blythi*, Hume, Proc. As. Soc. 1874, p. 240.

*Pásang*, male, *Boz*, female, Persian; *Borz*, Afghan; *Ter* (male) and *Sera*, Sindhi; *Phashin*, Baluchi.



I now turn to the Markhor. The first description of this animal was given by Wagner, under the name of *Ægoceros (Capra) Falconeri*, Hügel, and I may here remark that this name, given in honour of one of the most eminent of Indian naturalists, must be adopted for this wild goat, as it has priority by 3 years over Hutton's name *Capra megaceros*; Wagner's description having appeared in 1839 in the 'Gelehrte Anzeigen' of Munich. The skin and horns described were obtained by Freiherr v. Hügel from Kashmir. The animal was figured and again described in Wagner's appendix to Hügel's Kashmir, and both figure and description were repeated in the supplement to Schreber's Säugethiere by the same author. The references are given at full in the synonymy below. The horns of the typical specimen have an unusually open spiral curve.\*

Captain Hutton in 1842, described the 'Markhore' or the 'Snake-eater' of the Afghans, under the name of *Capra megaceros*, in the Calcutta Journal of Natural History, and gave a figure of the skull and horns. The form here figured is the Afghan variety, in which the spiral is so slight that the horns approach a straight line. This is the race for which Mr. Hume has proposed the name of *C. Jerdoni*,† but it is clear that if this animal be considered specifically distinct from the Kashmir *C. Falconeri*, Hutton's name must be retained for it. The same name *C. megaceros* was subsequently given by Cunningham in 1854, (Ladák p. 200), to the Kashmir form, but the author was under the impression that the animal was undescribed, and was unacquainted with either Hügel's or Hutton's name.

The most important question, however, is whether the Kashmir and Suliman forms of the Markhor are specifically distinct. At first it appears difficult to believe that animals belonging to the same species have in some instances horns with the open spiral of a corkscrew, and in others straight horns with only a deep spiral groove. As Mr. Blyth justly says‡, the horns vary in curve as much as those of the Koodoo do from those of the Impoofu (or Eland). But on the other hand it should be remembered not only that both forms of horns have long been perfectly well known to naturalists, but

\* So different are these horns from those of most Markhor, that some naturalists have supposed them to have been obtained from a tame goat. But as has been shewn by Blyth, the spiral in tame goats is always reversed, the anterior ridge just above the forehead turning inwards or towards the other horn at first. In the Markhor this ridge turns outwards. Judged by this test Wagner's figure represents a wild Markhor and not a game goat. I have never myself seen Markhor horns with so open a spiral as those of Hügel's type of *C. Falconeri*.

† It is probable that Mr. Hume's specimens may have been less spiral in form than Hutton's type, for the former are described as resembling an ordinary screw. But as I shall shew, the precise form of the horns varies greatly.

‡ P. Z. S. 1840, p. 80.

that there are large numbers of them in Europe. Blyth, who was certainly not disposed to unite distinguishable forms, was well acquainted with both races, so were Gray, Jerdon, and Adams, yet every one of these naturalists looked upon the different forms of horn as of no specific importance, no other difference having been shewn to exist in the animal, and the form of the horns varying in each locality. There was a living male from near Peshawar recently (and there may be still) in the gardens of the Zoological Society of London with very straight horns, differing, if my recollection is correct, from the type of *C. megaceros* of Hutton, almost as much as this does from the Kashmir race, and on a photograph published by Mr. E. Ward, four distinct forms of Markhor horns are represented. Hutton in his original description of *C. megaceros* says, "They (the horns) are spirally twisted but differ much in the closeness of the volutions, some turning round a straight and direct axis from the base to the apex, others taking a wider or more circular sweep." Indeed so notorious is the fact that these horns vary in curvature, that Blyth for a long time looked upon the animal as a feral race of tame goat and not a truly wild animal\*, and Vigne, who met with the Markhor both in Afghánistán and Káshmir, and who noticed the difference in the horns, pointed out that no other distinction existed in the animal.

As in the case of *Capra ægagrus* I give the synonymy below. In this I do not separate the two forms, because, so far as I am aware, no sufficient evidence has yet been adduced to shew that they deserve separation. But should such evidence hereafter be brought forward, I may repeat that the name *Capra Falconeri* will stand for the Kashmir form with openly spiral horns, and that of *C. megaceros* for the Suliman race with the horns more nearly approaching a straight line; it being remembered that much variation exists in both cases.

#### CAPRA FALCONERI.—*The Markhor.*

*Markhor goat*, Vigne, Personal Narrative of a visit to Ghuzni, Cabul, &c. p. 86, and vignette, p. 67.—Travels in Kashmir, &c., II., p. 279.

*Ægoceros (Capra) Falconeri*, Hügel: Wagner, Münch. Gel. Anz. IX, p. 430 (1839).

*Markbur*, Blyth P. Z. S. 1840, p. 80.—Ann. and Mag. Nat. Hist. VII. 1841, p. 196, note.

? *Rass*, Wood, Journey to source of the Oxus, p. 369 (1841).

*Markhor*, Burnes, Cabool, p. 387 (1842).

*Capra megaceros*, Hutton, Calcutta Jour. Nat. Hist. II, p. 535, Pl. XX, (horns), (1842).  
J. A. S. B., XV., p. 161.

*Capra Falconeri*, Hügel; Wagner, Beiträge zur Säugeth. Faun. in Hügel's Kaschmir, p. 579, (with a lithograph of the animal), (1844).

*Ægoceros Falconeri*, Wagner, Schreber's Säugethiere, Suppl. IV, p. 499, Tab. CCLXXXVII E,—Ib. V, p. 466.

\* P. Z. S. 1840, p. 80.

*Hircus agagrüs*, var. 1. Gray, Cat. Ung. Furb. B. M. (1852), p. 159.

*Capra megaceros*, Rapho-chhe, (Markhor) or large wild goat. Cunningham's Ladák, p. 199, Pl. 17, (1854).

*Hircus megaceros*, Adams, P. Z. S., 1858, p. 525.

*Capra megaceros*, Blyth, Cat. Mam. Mus. A. S., p. 176 (1863).—Jerdon, Mammals of India, p. 291 (1867).

*Hircus Falconeri*, Gray, Cat. Rum. Mam. B. M. 1872, p. 53.

*Capra Jerdoni*, Hume, Proc. A. S. B. 1874, p. 240.

*Markhor*, Afghan: *Ra-che*, (Rawa-che and Rapho-che ♂ and ♀), Ladák.

I have already referred to the *Capra bezoartica* of Linnæus. This was founded on the various accounts of the bezoar goat given by older writers, amongst whom was Aldrovandi. Blyth has derived the specific name *bezoartica*, which he adopts\* for the common Indian antelope, from Aldrovandi, and Jerdon† has followed Blyth in this as in most questions of mammalian nomenclature, so that in both lists this animal stands as *Antelope bezoartica*, Aldrovandi.

Now there is no rule more generally admitted, amongst English zoologists at least, than that specific names given before the publication of the 12th edition of Linnæus's *Systema Naturæ* in 1766 are invalid.‡ Aldrovandi§ dates from 1621.

\* Cat. Mam. Mus. As. Soc. p. 171, No. 528.

† Mam. Ind. p. 275, No. 228.

‡ Unless there is agreement amongst naturalists as to the adoption of rules for nomenclature, it is evident that the sole object of a scientific terminology, that all people of whatever race, despite difference of language, should employ the same term for the same animal, plant, mineral, &c., would not be gained. Any one would suppose that this is a self-evident proposition and that it is to the advantage of all naturalists to agree to fixed rules of nomenclature, but, strange to say, it is incredibly difficult to induce many to consent to any rules. So long as the absurd idea exists that species and genus-makers have rights which require protection, so long will anarchy prevail. The law of priority is established for general convenience and to enforce a fixed nomenclature, not to commemorate the makers of species.

The rules drawn up by a Committee of the British Association in 1842 (Rept. Brit. As. 1842, p. 106) and approved, with slight alterations, by another Committee of the same body in 1865 (Rept. B. As. 1865, p. 25) are the fairest yet proposed for regulating scientific nomenclature, and they should be adopted until other rules are established by general consent. To many naturalists in India these rules do not appear to be known, and I may therefore be excused for referring to them. The rules of Linnæus are republished at the commencement of the "Nomenclator Zoologicus" of Agassiz, but so many of them have been broken habitually for years, that they have become obsolete. Had they been enforced, zoological nomenclature would never have become the chaos it now is, and much advantage would I think be gained if they were better known than they are, and their general spirit at least adopted.

§ Aldrovandi, Quæd. Bis. p. 256, under *Capra bezoartica*, gives a figure probably meant for the Indian antelope, but in the text he describes several species, one of them



The *Capra bezoartica* of Linnæus is thus described "*Capra bezoartica cornibus teretibus arcuatis totis annulatis, gula barbata.*" The bearded chin, and the description of the animal's habits refer, I think, to the bezoar goat of Persia, *Capra ægagrus*, whilst the round *arcuate* horns are probably those of a Gazelle, and very possibly those of *Gazella subgutturosa*, the species found in Persia. The description cannot possibly be made to agree with the Indian antelope.

The first description of the Indian antelope published after the appearance of the 12th edition of Linnæus is that of Pallas, whose first fasciculus of the *Spicilegium Zoologicum*, published in 1767, contains a monograph of the genus *Antilope*. The Indian antelope is there described as *A. cervicapra*, p. 18, No. 16, and figured in Tab. I. and II. The *bezoartica* of the same monograph No. II., p. 14, is apparently an oryx.

Gmelin, Schreber, Wagner, and almost all continental writers have adopted Pallas's name for the species, and it has undoubted priority over all others. The same name appears to have been used by most English writers until lately. Error in this case, as in that of *Capra ægagrus*, is to be traced apparently to the British Museum Catalogues,\* in which the species was named *Cervicapra bezoartica* upon a well known principle, which although admissible, is extremely objectionable, that of converting the specific name into a generic term and coining a new specific term. This was in the catalogue of 1843, in which the only species retained under the genus *Antilope* was *A. melampus*. In both the subsequent catalogues, those of 1852 and 1872, the Indian antelope is made the sole member of the genus *Antilope*, Sundevall's genus *Æpyceros* being employed for *A. melampus*, but instead of restoring Pallas's specific name, Dr. Gray has in violation of all rule retained his own (or Aldrovandi's) most objectionable appellation *bezoartica*. It is a question whether this name should be preserved at all, in the first place it is misleading, as the Indian antelope is not the bezoar goat, and in the second place it leads to confusion because the animal is not the *Capra bezoartica* of Linnæus; but if the antelope be placed in the genus *Antilope*, there can be no question that its proper name is *A. cervicapra*.

There remains, however, one question to be decided, and that is, whether *A. cervicapra* is correctly made the type of the genus *Antilope*. This genus was not employed by Linnæus, who placed the species of antelope known to him, with the goats, under *Capra*. The modern genus must therefore be derived from Pallas, who, as already mentioned, published a

probably the wild goat of Persia. It is evident that he meant to give the name to the animal from which bezoar was obtained, and he figured the Indian antelope under the mistaken idea that it was the real bezoar-producing animal.

\* List Sp. Mam. B. M., 1843, p. 159.—Cat. Mam. Ungulata Furcipedes, 1852, p. 66.—Cat. Rum. Mam. 1872, p. 40.



monograph of *Antilope* in 1767, (Spic. Zool. No. I.) This monograph includes 16 species, the last of which is *A. cervicapra*.

The old Linnæan rule is that when a genus is divided, the majority of the species shall be retained under the old generic name, and a new name be given to the smaller section. There is another rule adopted by some naturalists, *viz.*, to keep the generic name for the species first placed in the list by the original author of the genus. This last rule has led to absurdities, and, as Dr. Günther has shewn, it would render the common crocodile the type of the genus *Lacerta*. Practically it has been usual to allow any one dividing one of the old genera into several to retain the original name for whichever section he thought best, and the old generic name has usually been preserved for the best known species and its affines.

The first naturalist who divided the old genus *Antilope* was Blainville,\* who in 1816 broke it up into 9 generic groups. In the first of these, *Antilope*, he retained 3 species, *A. cervicapra*, *A. saiga*, and *A. gutturosa*. The next author who divided the genus, Hamilton Smith, retained the same species with some additions, but this is of small importance. Blainville also established a genus *Cervicapra* containing a very miscellaneous collection of species; *A. dama*, *A. redunca*, *A. oreotragus*, *A. saltiana*, *A. sumatrensis*, *A. quadricornis*, and several others.

Of the three species left in the genus *Antilope* by Blainville, *A. saiga* was made into a distinct genus by Gray in 1843, and *A. gutturosa* appears to belong to *Gazella* and not to restricted *Antilope*. It is placed in *Gazella* by Sundevall and Sir V. Brooke, whilst Gray in his later catalogues associates it with *Procapra picticauda* of Hodgson, a form which must I think also be referred to the gazelles. The sole remaining representative of the genus *Antilope* is consequently the Indian antelope, which cannot be assigned to the genus *Cervicapra*, because it was not placed in that genus by Blainville, who first used the name, nor is it congeneric with any of the species assigned to *Cervicapra* by Blainville. Gray's genus *Cervicapra* falls to the ground, because if the name be used at all, it can only be employed for Blainville's genus or part of Blainville's genus. On all grounds, therefore, it appears that the correct generic and specific name of the Indian antelope is *Antilope cervicapra*.

\* Bul. Soc. Phil. 1816, p. 74. I have not access to this work and quote from Wagner and Fitzinger.

